WHAT IS CLAIMED IS:

(1) A hybrid electric vehicle drive system comprising:

an engine having an output shaft which rotates at a first speed;

a generator which is operatively coupled to said engine which selectively produces a reaction torque, effective to control said first speed; and

a clutch assembly which is selectively coupled to said generator and which is effective to selectively augment said reaction torque, thereby cooperating with said generator to control said first speed.

(2) The drive system of claim 1 further comprising:

a controller which is communicatively coupled to said generator, to said engine, and to said clutch assembly, said controller being effective to determine an amount of reaction torque required to control said first speed, and based upon said amount of reaction torque, to cause said generator and said clutch assembly to cooperatively provide said reaction torque.

(3) The drive system of claim 2 wherein said clutch assembly is communicatively coupled to a source of pressurized fluid by use of a selectively actuatable valve assembly, and wherein said controller is effective to selectively actuate said valve assembly, thereby controlling said reaction torque.

(4) The drive system of claim 3 wherein said valve

assembly comprises a variable solenoid valve.

(5) The drive system of claim 1 wherein said generator is coupled to said engine by use of a planetary gear set.

(6) The drive system of claim 5 further comprising a motor which cooperates with said generator and said engine to power said drive system.

(7) The drive system of claim 6 wherein said motor, said engine, and said generator are arranged in a power-split type configuration.

(8) An apparatus for use within a hybrid electric vehicle including an engine which operates at a first speed, said apparatus being effective to control said first speed and comprising:

a generator including a stator assembly and a rotor assembly which is operatively coupled to said engine, said generator being effective to selectively provide a first torque through said rotor assembly, said torque being effective to control said first speed; and

a clutch assembly which selectively engages said rotor assembly effective to provide a second torque through said rotor assembly, said second torque being effective to augment said first torque, thereby further controlling said first speed.

(9) The apparatus of claim 8 wherein said clutch assembly includes a drum portion, a plurality of first plates which are coupled to said drum portion, a

plurality of second plates which are coupled to said generator, and a piston which is effective to selectively compress said plurality of first and second plates, thereby providing said second torque.

(10) The apparatus of claim 9 further comprising:

a sensor which measures said first speed and which generates a first signal based upon said measured first speed; and

a controller which is communicatively coupled to said sensor, to said generator and to said clutch assembly, said controller being effective to receive said first signal and, based upon said first signal, to selectively cause said generator to provide said first torque.

(11) The apparatus of claim 10 wherein said controller is further effective to compare said first signal to a threshold value and if said first signal exceeds said threshold value to selectively cause said clutch assembly to provide said second torque.

(12) The apparatus of claim 8 wherein said clutch assembly comprises a hydraulic clutch assembly.

(13) The apparatus of claim 8 wherein said engine and said generator are operatively coupled by use of a planetary gear set.

(14) A method for controlling the speed of an engine within a hybrid electric vehicle including a generator

having a rotor assembly which is operatively coupled to said engine, said method comprising the steps of:

selectively activating said generator effective to produce a negative toque which lowers said speed of said engine; and

selectively and frictionally engaging said rotor assembly effective to further lower said speed of said engine.

(15) The method of claim 14 further comprising the steps of:

monitoring said speed;

comparing said measured speed to a first threshold value; and

selectively activating said generator if said measured speed exceeds said threshold value effective to cause said speed to remain below said threshold value.

(16) The method of claim 15 wherein said generator has a capacity, said method further comprising the steps of:

determining whether said capacity has been exceeded; and

selectively and frictionally engaging said rotor assembly if said capacity has been exceeded, thereby causing said speed to remain below said threshold value.

(17) The method of claim 16 wherein said rotor assembly is selectively and frictionally engaged by use of a brake assembly.

(18) The method of claim 16 wherein said rotor assembly is selectively and frictionally engaged by use of a clutch assembly.

(19) The method of claim 16 wherein said engine and said rotor assembly are operatively interconnected by use of a planetary gear set.